

DUDLEYA PACHYPHYTUM (CRASSULACEAE),
A NEW SPECIES FROM ISLA CEDROS, MEXICO

Reid Moran and Michael Benedict

Lau (1980) told of finding an unknown *Dudleya* at the north end of Isla Cedros and showed four handsome color photographs of it. We have had this plant under study for over nine years; and since Lau has expressed the hope that it will be published soon, we hasten to oblige.

Dudleya pachyphytum Moran and Benedict, species nova

Rosulae laxae aggregatae vulgo 12-22 cm latae 12-25-foliatae, foliis crassissimis farinosis ovatis ad oblongis apice rotundatis lateve obtusis apiculatis 5-13 cm longis 3-7 cm latis. Rami floriferi 2-7 dm alti, 20-50 foliis cordato-ovatis instructi. Inflorescentia compacta ex 3-6 ramis confertis 1-2-plo bifurcatis constans, pedicellis 3-6 mm longis. Corolla alba tubularis 8-11 mm longa. Holotypus: Moran et Benedict 29036 (SD 105549). Species insignis foliis suis percrassis obtusissimis ab aliis speciebus Dudleyae recedens generemque Pachyphytum primo adspectu admonens, floribus suis D. albiflora similis quae autem statura multo parviore foliisque angustis acuminatis differt.

Plants to 7 dm or more wide, of 10-20 or sometimes 50 or more rosettes. Caudex to 4 dm or more long, in age decumbent, 2-5 cm thick, densely clothed below with persistent dried leaves and with these ca. 10 cm thick. Rosettes compact, 12-22 (-33) cm wide, of 12-25 (-35) leaves or to 55 in cultivated plants. Rosette leaves farinose, often pale orange in age, massive and turgid but drying tough and leathery, ovate to oblong, broadest near base, rounded to broadly obtuse, apiculate, 5-10 (-13) cm long, 3-5 (-7) cm wide, 1.5-2.5 cm thick, ventrally flattish with conspicuous pattern of low ridges corresponding to edges of leaves adjacent in bud, dorsally rounded and asymmetrically low-keeled, the margins obtuse near base to rounded above. Floral stems 1-4, erect or mostly spreading, 2-5 (-7) dm long, 5-12 mm thick and to 18 mm wide at base, farinose, pale pink becoming red especially below, with 20-35 (-50) spreading leaves; these cordate-ovate, clasping, broadly acute, 1-2.5 cm long and wide, 3-13 mm thick. Inflorescence nodding in bud, later erect, rather dense, 8-14 cm wide, of 3-6 close-set 1-2x bifurcate branches or sometimes with a few more scattered below; cincinni circinate, in age

spreading, 2-5 cm long, with 5-12 flowers; pedicels erect, 2-6 mm long, 1-2.5 mm thick at base, thickened upward. Calyx rounded below, 5-9 mm long, 4.5-7 mm wide, the segments appressed, triangular-lanceolate, acute, 4-7 mm long, 2.5-4 mm wide. Corolla white, 8-11 mm long, 4-5 mm thick, the petals connate 2-3 mm, erect or with tips slightly outcurved, elliptic-oblong, acute, 2-3 mm wide. Filaments white, the epipetalous 5-8 mm long, adnate 2.5-3.5 mm, the antesepalous 6.5-9 mm long, adnate 1.5-2 mm; anthers before dehiscence red, 1.2-1.4 mm long. Nectar glands white, 0.9-1.2 mm wide. Gynoecium 7-10 mm high, 2-3 mm thick, the pistils erect, appressed, connate ca. 2 mm ventrally, tapering into styles ca. 1.5-2 mm long; ovules 25-45, 0.4-0.5 mm long. Seeds ca. 0.6 mm long, with ca. 15 longitudinal striations. Chromosome number: $n=17$.

Type collection: Abundant on upper west slope of the island at 450 m, ca. 1 km northwest of the old mine area of Cañada de la Mina, north end of Isla Cedros, Baja California Norte, México (near 28°21½'N, 115°14'W), 18 July 1980, Moran & Benedict 29036: holotype SD 105549; isotypes SBBG and to go.

Distribution: Known only from the north end of Isla Cedros at ca. 100-550 m elevation, occasional in pine forest and abundant on cliffs and steep rocky slopes in the fog zone, especially with north to northwest exposure: from Punta Norte at least 3 km south on the west flank of the island, apparently down to ca. 100 m; around the upper watershed of Arroyo Valdez (south to SE of Punta Norte) and to the crest of the divide with Cañada de la Mina to the south; very scarce in upper Cañada de la Mina, down to ca. 300 m. The few solitary young rosettes seen on the upper slopes of Cañada de la Mina, where none were noted before, raise the question whether the range could be expanding southward.

The erect petals and pistils place D. pachyphytum in the sub-genus Dudleya. From buds of the type collection Dr. Charles H. Uhl reports some irregularity in meiosis, with extra and undersized microspores. He was unable to get an exact chromosome count but guessed $n=17$. However, from a plant collected by Benedict in 1977 Dr. Uhl reports a definite count of $n=17$, with no irregularity. This is the basic number for the genus (Uhl & Moran 1953): thus this species is a diploid.

In its habit, with clusters of rosettes on elongate stems, *D. pachyphytum* recalls such other maritime species as the diploid *D. candida* Britt. and *D. farinosa* (Lindl.) Britt. & Rose and the polyploid *D. caespitosa* (Haw.) Britt. & Rose and *D. greenei* Rose--which often likewise have farinose leaves. However, it differs from these, and seems unique in the genus, in its blunt and very thick leaves. The rosettes thus recall those of some members of the Mexican genus *Pachyphytum*, for which we name it. The undistinguished white flowers are rather similar to those of the variable polyploid *D. albiflora* Rose, which also occurs on Isla Cedros (and southward). That plant is much smaller, with smaller and especially narrower leaves, which are acuminate to slender-acute.

References

- Lau, Alfred B. 1980. Discovery at a virgin outpost. *Cact. Succ. J.* 52:238-240.
- Uhl, Charles H., and Reid Moran. 1953. The cytotaxonomy of *Dudleya* and *Hasseanthus*. *Amer. J. Bot.* 40:492-502.